Prevalence of Bacillus cereus in selected foods and detection of enterotoxin using TECRA-VIA and BCET-RPLA

ABSTRACT

Enterotoxigenic Bacillus cereus was detected in cooked foods (17), rice noodles (3), wet wheat noodles (2), dry wheat noodles (10), spices (8), grains (4), legumes (11) and legume products (3). One hundred ninety-four (42.3%), 70 (15.3%) and 23 (5.2%) of the 459 presumptive B. cereus colonies isolated from PEMBA agar were identified as B. cereus, Bacillus thuringiensis and B. mycoides, respectively. B. cereus isolates were examined for growth temperature, pH profile and enterotoxin production using both TECRA-VIA and BCET-RPLA kits. One hundred seventy-eight (91.8%) and 164 (84.%) of the strains were enterotoxigenic as determined using TECRA-VIA and BCET-RPLA, respectively. Eighty-two (50%) of the enterotoxigenic strains were capable of growing at 5 °C, and 142 (86.6%) grew at 7 °C within 7 days of incubation. The enterotoxigenic strains did not grow at pH 4.0 but 69 (42.0%) of the strains were able to grow at pH 4.5 within 7 days at 37 °C. The isolates were resistant to ampicillin (98.8%), cloxallin (100%) and tetracycline (61.0%), and susceptible to chloroamphenicol (87%), erythromycin (77.4%), gentamycin (100%) and streptomycin (98.7%).

Keyword: Bacillus cereus; Enterotoxin; Food; VIA